

Amendments to the Claims

1. (Previously Amended) An electrochemical test device for determining the presence or concentration of an analyte in an aqueous fluid sample, said electrochemical test device comprising:

(a) a single substrate, the single substrate comprising a non-conductive coating affixed to one side of a flexible material;

(b) a working electrode comprising an amorphous semiconductor material affixed to the non-conductive coating, said working electrode having ~~on~~ a first electrode area, a first lead and a first contact pad;

(c) a counter electrode comprising an amorphous semiconductor material affixed to the non-conductive coating, said counter electrode having a second electrode area, a second lead and a second contact pad; and

(d) a reagent capable of reacting with the analyte to produce a measurable change in potential which can be correlated to the presence or concentration of the analyte in the fluid sample, said reagent overlaying at least ~~of~~ a portion of the first electrode area of the working electrode.

2. (Original) The electrochemical test device of claim 1 wherein said device further comprises a reference electrode comprising an amorphous semiconductor material affixed to the non-conductive surface, said reference electrode having a third electrode area, a third lead, and a third contact pad, and wherein at least a portion of the third electrode area is overlaid with a reference material.

3. (Original) The electrochemical test device of claim 2 wherein said reference material is silver/silver chloride.

4. (Previously Amended) The electrochemical test device of claim 1 wherein the flexible material is a metallic material.

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5. (Previously Amended) The electrochemical test device of claim 1 wherein the flexible material comprises a polymeric sheet material.

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6. (Original) The electrochemical test device of claim 5 wherein the polymeric sheet material is selected from the group consisting of polyesters, polycarbonates and polyimides.

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7. (Original) The electrochemical test device of claim 4 wherein the non-conductive coating is an epoxy resin.

8. (Original) The electrochemical test device of claim 1 wherein the amorphous semiconductor material is amorphous silicon oxide.

9. (Original) The electrochemical test device of claim 8 wherein the amorphous silicon oxide is doped with an ion to increase conductivity.

10. (Original) The electrochemical test device of claim 9 wherein the amorphous silicon oxide is doped with lithium.

11. (Previously Amended) The electrochemical test device of claim 1 where the amorphous semiconductor material is gold.

12. (Previously Amended) The electrochemical test device of claim 1 where the amorphous semiconductor material is silver.

13. (Original) The electrochemical test device of claim 1 wherein the reagent comprises an enzyme and a redox mediator.

14. (Original) The electrochemical test device of claim 13 wherein the enzyme is glucose oxidase.

15. (Original) The electrochemical test device of claim 14 wherein the redox mediator is potassium ferricyanide.

16. (Original) The electrochemical test device of claim 1 wherein the electrochemical test device further comprises a blood separating membrane.

17-51 (Previously Canceled)

17 ⁵². (Currently Amended) A device comprising:

a single substrate, the single substrate being of sufficient flexibility to undergo roll-type processing, the single substrate comprising a flexible metallic material;

a non-conductive, surface morphology-improving coating affixed to a surface of the single substrate, said coating comprising an epoxy coating; and

an amorphous semiconductor material layer affixed to the non-conductive coating.

¹⁸ ⁵³. (Previously Amended) The device of claim ¹⁷ ⁵², wherein the substrate has a thickness of 0.0005 - 0.005 inches.

¹⁹ ⁵⁴. (Previously Amended) The device of claim ¹⁸ ⁵³, wherein the metallic material comprises aluminum.

²⁰ ⁵⁵. (Previously Amended) The device of claim ¹⁷ ⁵², wherein the coating has a thickness less than about 0.005 inches.

[⁵⁶. (Canceled) ~~The device of claim 55, wherein the coating comprises an epoxy coating.~~

²¹ ⁵⁷. (Previously Amended) The device of claim ¹⁷ ⁵², wherein the semiconductor material comprises amorphous silicon oxide.

²² ⁵⁸. (Previously Amended) The device of claim ²¹ ⁵⁷, wherein the amorphous silicon oxide is doped with an ion to increase conductivity.

²³ ⁵⁹. (Previously Amended) The device of claim ¹⁷ ⁵², wherein the semiconductor material layer has a thickness of 1 - 5 microns.

60. (Previously Canceled) ~~An electrochemical testing device comprising:
a single substrate, the single substrate being of sufficient flexibility to undergo roll-type
processing, the single substrate layer comprising an annealed, preshrunk polymeric material;
a surface morphology-improving coating affixed to a surface of the single substrate layer;
and
an amorphous semiconductor material affixed to the non-conductive coating.~~

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61. (Previously Amended) A device comprising:
a single substrate, the single substrate being of sufficient flexibility to undergo roll-type
processing, the single substrate comprising an annealed, preshrunk polymeric material;
a surface morphology-improving coating affixed to a surface of the single substrate,
wherein the coating is a non-conductive coating, and
an amorphous semiconductor material affixed to the coating.

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62. (Previously Amended) The device of claim 61, wherein the polymeric material
comprises one of a polyester, polycarbonate, and polyimide material.

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63. (Previously Amended) The device of claim 61, wherein the coating has a
thickness less than about 0.005 inches.

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64. (Previously Amended) The device of claim 61, wherein the semiconductor
material comprises amorphous silicon oxide.

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65. (Previously Amended) The device of claim 64, wherein the amorphous silicon
oxide is doped with an ion to increase conductivity.

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66. (Previously Amended) The device of claim 64, wherein the semiconductor
material layer has a thickness of 1 - 5 microns.

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67. (Previously Amended) The device of claim 52, wherein the device comprises an electrochemical testing device, the device further comprising a reagent capable of reacting with an analyte to produce a measurable change in potential, and at least one electrode formed on the surface coating.

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68. (Previously Amended) The device of claim 61, wherein the device comprises an electrochemical testing device, the device further comprising a reagent capable of reacting with an analyte to produce a measurable change in potential, and at least one electrode formed on the surface coating.

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69. (Previously Added) An electrochemical test device for determining the presence or concentration of an analyte in an aqueous fluid sample, said electrochemical test device comprising:

a substrate, the substrate consisting of a single layer of flexible material, the flexible material having sufficient flexibility to undergo roll-type processing;

a non-conductive coating affixed to one side of the substrate;

a working electrode comprising an amorphous semiconductor material affixed to the non-conductive coating, said working electrode having a first electrode area, a first lead and a first contact pad;

a counter electrode comprising an amorphous semiconductor material affixed to the non-conductive coating, said counter electrode having a second electrode area, a second lead and a second contact pad; and

a reagent capable of reacting with the analyte to produce a measurable change in potential which can be correlated to the presence or concentration of the analyte in the fluid sample, said reagent overlaying at least a portion of the first electrode area of the working electrode.

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70. (Previously Added) The device of claim 69, wherein the non-conductive coating has a thickness sufficient to fill surface valleys on the substrate.

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71. (Previously Added) The device of claim 70, wherein the thickness is less than about 0.005 inches.

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~~72.~~ (Previously Added) The device of claim 69, wherein the non-conductive coating comprises an epoxy coating.

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~~73.~~ (Previously Added) The device of claim 69, wherein the semiconductor material comprises amorphous silicon oxide.

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~~74.~~ (Previously Added) The device of claim 73, wherein the amorphous silicon oxide is doped with an ion.

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~~75.~~ (Previously Added) The device of claim 69, wherein the flexible material comprises a metallic foil having a thickness of 0.0005 - 0.005 inches.

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~~76.~~ (Previously Added) The device of claim 69, wherein the amorphous semiconductor material has a surface texture less than 0.33 microns.

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77.

(Previously Added) An electrochemical test device for determining the presence or concentration of an analyte in an aqueous fluid sample, said electrochemical test device comprising:

a single substrate, the single substrate comprising a layer of flexible material, the flexible material having sufficient flexibility to undergo roll-type processing;

a non-conductive coating affixed to a side of the single substrate, the non-conductive coating having sufficient thickness to fill surface valleys of the single substrate thereby providing improved surface flatness relative to the substrate;

a working electrode comprising an amorphous semiconductor material affixed to the non-conductive coating, said working electrode having a first electrode area, a first lead and a first contact pad;

a counter electrode comprising an amorphous semiconductor material affixed to the non-conductive coating, said counter electrode having a second electrode area, a second lead and a second contact pad; and

a reagent capable of reacting with the analyte to produce a measurable change in potential which can be correlated to the presence or concentration of the analyte in the fluid sample, said reagent overlaying at least a portion of the first electrode area of the working electrode.

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78. (Previously Added) The device of claim 77, wherein the thickness of the non-conductive coating is less than about 0.005 inches.

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79. (Previously Added) The device of claim 77, wherein the non-conductive coating comprises an epoxy coating.

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80. (Previously Added) The device of claim 77, wherein the semiconductor material comprises amorphous silicon oxide.

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81. (Previously Added) The device of claim 80, wherein the amorphous silicon oxide is doped within an ion.

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82. (Previously Added) The device of claim 47, wherein the flexible material
comprises a metallic foil having a thickness of 0.0005 - 0.005 inches.

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83. (Previously Added) The device of claim 47, wherein the amorphous
semiconductor material has a surface texture less than 0.33 microns.